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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,922	06/13/2001	Karin Angela Hing	HING3001/REF	8656
7590 03/22/2007 Bacon & Thomas 625 Slaters Lane 4th Floor Alexandria, VA 22314			EXAMINER HOFFMANN, JOHN M	
			ART UNIT 1731	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	
3 MONTHS			03/22/2007	
			DELIVERY MODE PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 09/787,922	Applicant(s) HING ET AL.	
	Examiner John Hoffmann	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-27 and 32-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-27 and 32-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 17-19 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Claim 17 requires evaporating the carrier prior to the burn-out. But claim 1 requires burn-out of the slip. When the carrier is evaporated, the slip no longer exists: see page 3 (lines 16-18) of the present specification which indicates that the term "slip" is commensurate with its conventional usage. That is, a slip is a slurry. It is clear that claim 17 requires that the liquid/water has been evaporated – thus the slip no longer exists. Claim 17 requires the burn out occur on the casting (which is not a slip); this is mutually exclusive of claim 1 which requires the burn out of the slip. Thus, claim 17 does not further limit claim 1, rather it takes the claim to a scope which is mutually exclusive from that of claim 1.

To look at it another way: Claim 17 is directed to Applicant's disclosed to those specific embodiments where it is a casting that is heated to burn out. A slip is a fluid; a casting is a body. But claim 1 is directed to the invention where the burnout comes without converting the slip into a body. These are two mutually exclusive inventions.

Claims 17-19 are not further treated on its merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1,2,4-16,20-27,33 and 35-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

From MPEP 2173.05(h):

Alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims. One acceptable form of alternative expression, which is commonly referred to as a Markush group, recites members as being "selected from the group consisting of A, B and C." See *Ex parte Markush*, 1925 C.D. 126 (Comm'r Pat. 1925).

Presently, claim 7 has a group which is very similar to the above accepted form, but there is no indication that the group is "consisting of" the members. Therefore it is impossible for anyone to tell if applicant's group is open or closed to additional members - and thus the claim presents uncertainty or ambiguity with respect to the question of scope of the claim. If the above "acceptable form" is not desirable for Applicant, Examiner can be telephoned for other expressions. The same applies to claim 10 and 16.

Claim 7: the term "AW-glass" is indefinite as to its meaning. Examiner could not find any definition or explanation for this term in the present application or via and EAST text search. This is deemed to be a prima facie showing that one would not be able to ascertain what is meant by the term. The burden is now on applicant to demonstrate that one would be able to understand what is meant by the term.

Claim 12: the term "w/v %" is indefinite as to its meaning. It is unclear if the "/" means "or" as it does in claim 4. If the term is to mean weight: volume % - it is not stated what the units of the weight or the units of the volume are. Is it pounds/pints, gram/liter, tons/cubic yard or what. The same applies to claims 13-15.

Claim Rejections - 35 USC § 103

Claims 1, 4-27, 32, 33 and 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/04013 in view of Oishi 5,895,897 and optionally in view of Fischer "Colloidal Dispersions".

See the prior Office actions for the manner in which the first two references were applied. Fischer is now applied as evidence that Ball mills have several known advantages over other mills. See the last paragraph on page 304: solvents are retained, preliminary mixing is unnecessary, operation without attention, low maintenance and operating costs. It would have been obvious to use a ball mill for the mechanical foaming means because such is a conventional foaming apparatus – as set forth in Oishi – depending upon what equipment is available. And for any of the Fischer advantages- especially the advantage that the solvents are retained: see page 6 of WO/93/04013 which discloses alcohol. It is also noted that Fischer discloses that ball mills have been "widely adopted" and that they have been "long employed" for grinding ceramic products. Thus one would reasonably expect to find a ball mill in most ceramic

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production facilities. Thus one would be motivated to use this common piece of equipment as the foamer, rather than creating or purchasing another type of foamer.

Alternatively: as pointed out above claim 1 lists four steps, but there is no indication that the method requires all 4 steps. It is deemed that it is reasonable to assume that the missing conjunction between steps c) and d) is an "or". Although it is also reasonable to assume it is an "and", the Office must use the broadest reasonable interpretation. The "or" would be the broadest reasonable limitation. It is clear that WO 92/04013 has at least one of the 4 steps.

Claims 2 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/04013 in view of Oishi and optionally in view of Fischer "Colloidal Dispersions". as applied to claims 1, 4-27, 32, 33 and 35-39 above, and further in view of Wu, 5656562 for the reasons as set forth in the Office action of 10/11/02 .

Claims 2, 40 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/04013 in view of Oishi and optionally in view of Fischer "Colloidal Dispersions" as applied to claims 1, 4-27, 32, 33 and 35-39 above, and further in view of Nukada 5395722 for the reasons set forth in the Office action of 3/25/2003.

Response to Arguments

Applicant's arguments filed 5-22-2006 in the Reply Brief have been fully considered but they are not persuasive.

It is argued that a synthetic bone material is not fairly taught by the references. This is not persuasive. It appears that Applicant is interpreting the intended use limitation in the preamble more narrowly than is appropriate.

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Applicant's statement about hydroxyapatite is not understood, regardless, there is no indication as to why the prior art's hydroxyapatite cannot be used as a synthetic bone material in biomedical applications. Whereas applicant also argues about "improved implants", it does not appear to very relevant because the claims do not appear to require using the material as an implant. In fact, the claims do not require any use steps. Moreover, there is no indication in the record that applicant's specific example were actually used as an implant or as a biomedical application. Furthermore, as per page 5, lines 17-18 of the specification indicates that the ceramic need not even be biocompatible. Thus it would seem the "intended use" is very broad and would

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cover an artificial bone for an artificial skeleton for a biomedical instructional model. In that respect, almost any material could be used as an artificial bone. Thus the present claims do not appear to have substantial material limitations which define over the prior art.

It is further argued that the use of a ball mill is an important aspect of the present invention. No evidence has been supplied to show any new or unexpected result – or anything other type of result that would overcome the prima facie showing of obviousness.

It is also argued that there no suggestion to use a ball mill. This argument is not persuasive for the reasons given in the Examiner's answer.

It is also argued that Oishi does not disclose the claimed pore size. Size is generally not a patentable feature.

From MPEP 2144.04

A. Changes in Size/Proportion

In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955) (Claims directed to a lumber package "of appreciable size and weight requiring handling by a lift truck" where held unpatentable over prior art lumber packages which could be lifted by hand because limitations relating to the size of the package were not sufficient to patentably distinguish over the prior art.); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976) ("mere scaling up of a prior art process capable of being scaled up, if such were the case, would not establish patentability in a claim to an old process so scaled." 531 F.2d at 1053, 189 USPQ at 148.).

In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Oishi discloses dimensions that fall within the claimed range. Moreover, from the middle of page 4 of the present specification, it appears that applicant is merely identifying what is meant by “macroporous”. Applicant has not indicated anything , new unusual or unexpected about the claimed porosity range. Since Applicant and the prior art do substantially the same thing, one would expect similar results.

Regarding Wu and Nukada it is argued that the references do not set forth a suggestion or motivation, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The rejection sets forth how obviousness was established. See rejection.

Applicant's arguments filed 29 January 2007 have been considered but are moot in view of the new ground(s) of rejection.

It is argued that claim does not recite that all of the liquid carrier has to be evaporated. The claim may not “recite” it, but it requires that at least substantially all the carrier is evaporated. Claim 17 requires that “the” liquid carrier is allowed to evaporate – the “the” refers back to the carrier of claim 1. Applicant’s assertion that claim 17 reads on any portion to evaporate is not well taken – because that would nearly be meaningless. During any process, at least some portion of water is allowed to

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evaporate. There is nothing in the disclosure that suggests that the claim 17 was intended to read on any amount of water.

It is also argued that AW glass-ceramic stands for Apatite-Wollastonite glass ceramic, that this is well known and applicant submitted copies of references to support this. Examiner's review of the evidence suggests that it only shows what is meant by the terms now.

From MPEP 2111.01:

Plain Meaning

I. THE WORDS OF A CLAIM MUST BE GIVEN THEIR "PLAIN MEANING" UNLESS THEY ARE DEFINED IN THE SPECIFICATION

While the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination.

The evidence does not rely on the specification, prosecution history, prior art or other claims. The evidence seems to be created in 2007 – this is subsequent art, not prior. One of the references appear to be directed from a Japanese language 1994 document – but there is no indication as to when the English abstract was created. It may have been created subsequent to the current filing date. Furthermore it is noted that the Blackwell Synergy shows that the term is NOT what applicant says it means. Rather it shows that the term refers to a CaO- SiO₂-P₂O₅-MgO-CaF₂ glass – seemingly the glass powder prior to the devitrification.

Applicant also provides evidence as to what "w/v %" means in the biological field as of December 2006. This is largely irrelevant as to what "w/v %" means in the field of ceramics as of the time of filing. Furthermore the definition relates to solutes in

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solvents. Ceramics are considered to be not solutes (claim 14-15) thus the definition cannot apply.

Applicant also refers to Example 1 on page 16. Examiner can find nothing in Example 1 which gives any reference to "w/v %". Applicant should point to the specific page and line numbers – and even explain support if it is not explicitly mentioned.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

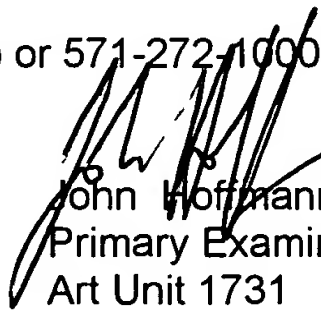
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


John Hoffmann
Primary Examiner
Art Unit 1731

3-19-07

jmh